UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,937	06/04/2002	Tetsuyuki Kurata	2418.43US01	3017

7590   04/07/2004

Douglas J Christensen
Patterson Thuente Skaar & Christensen
4800 IDS Center
80 South Eighth Street
Minneapolis, MN 55402-2100

EXAMINER
STAFIRA, MICHAEL PATRICK

ART UNIT	PAPER NUMBER
2877	

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/009,937	KURATA ET AL.
	Examiner	Art Unit	
	Michael P. Stafira	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____ .
2a) ☒ This action is **FINAL**.　　　2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
   closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-39_ is/are pending in the application.
   4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) _1-4,8-12,16-29,32 and 37_ is/are rejected.
7) ☒ Claim(s) _5-7,13-15,30,31,33-36,38 and 39_ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All　b)☐ Some * c)☐ None of:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
    3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage
       application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)
1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
   Paper No(s)/Mail Date _____ .
4) ☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____ .

DETAILED ACTION

Claim Objections

1.   Claim 5 is objected to because of the following informalities: In claim 5, after

"determined average title" should be --determined average tilt--. Appropriate correction is

required. Applicant is advised to further review the amended claims for grammar errors such as

spelling and spacing.

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed
> in the United States before the invention by the applicant for patent or (2) a patent granted on an application for
> patent by another filed in the United States before the invention by the applicant for patent, except that an
> international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this
> subsection of an application filed in the United States only if the international application designated the United
> States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 1-4, 8-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Ohsaki et al.

('352).

Claim 1

         Ohsaki et al. ('352) discloses a method of measuring transmitted light intensity of light

that has come from the light incident side for a plurality of light incident angles (See Fig. 1, Ref.

5) by rotating the element about an axis perpendicular to the direction of transmitted light

towards the element (See Abstract); analyzing dependence (Fig. 1, Ref. 3) of the measured

transmitted light intensity for the plurality of light incident angles; and determining the pretilt

angle of the element based upon the analysis results (Col. 8, lines 26-39).

Claim 2

The reference of Ohsaki et al. ('352) further discloses measuring the retardation for the

plurality of light incident angles so as to determine the pretilt angle (The rotation of element (5)

in Ohsaki et al. ('352) produces a retardation of the angles of incident light and therefore reads

on applicants limitations).

Claim 3

Ohsaki et al. ('352) further discloses determining the pretilt angles by measuring the

stokes parameter of the plurality of light incident angles. (The reference of Ohsaki et al. ('352)

discloses all the optical elements needed to calculate the stokes parameter as disclosed in

applicants specification on page 18, paragraph 2 and therefore reads on applicants limitations).

Claim 4

The reference of Ohsaki et al. ('352) further discloses measuring the transmitted light

intensity for the plurality of light incident angles, monochromatic light is incident from the light

incident side (Col. 10, lines 57-64).

Claim 8

Ohsaki et al. ('352) discloses measuring transmitted light intensity of light from the light

incident side for a plurality of light incident angles by rotating the element (Fig. 1, Ref. 5) about

an axis perpendicular to the direction of transmitted light towards the element (Fig. 1, Ref. 5) and

at a plurality of optical element arrangements for each light incident angle (See Abstract);

analyzing dependence (Fig. 1, Ref. 3) of the measured transmitted light intensity for the plurality

of light incident angles; and determining the pretilt angle of the element based upon the analysis

results (Col. 8, lines 26-39).

Claim 9

The reference of Ohsaki et al. ('352) further discloses measuring the retardation for the

plurality of light incident angles so as to determine the pretilt angle (The rotation of element (5)

in Ohsaki et al. ('352) produces a retardation of the angles of incident light and therefore reads

on applicants limitations).

Claim 10

Ohsaki et al. ('352) further discloses determining the pretilt angles by measuring the

stokes parameter of the plurality of light incident angles. (The reference of Ohsaki et al. ('352)

discloses all the optical elements needed to calculate the stokes parameter as disclosed in

applicants specification on page 18, paragraph 2 and therefore reads on applicants limitations).

Claim 11

The reference of Ohsaki et al. ('352) further discloses measuring the transmitted light

intensity for the plurality of light incident angles monochromatic light is incident from the light

incident side (Col. 10, lines 57-64).

Claim 12

Ohsaki et al. ('352) further discloses detecting the pretilt for the retardation which is

based on the stokes parameter of the plurality of incident angles. (The rotation of element (5) in

Ohsaki et al. ('352) produces a retardation of the angles of incident light and discloses all the

optical elements needed to calculate the stokes parameter as disclosed in applicants specification

on page 18, paragraph 2, therefore the reference of Ohsaki et al. ('352) determines the pretilt

angle of the optical element.)

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

4.   Claims 16-29,32,37 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ohsaki et al. ('352) in view of Hirosawa ('208).

Claim 16

Ohsaki et al. ('352) discloses a light sources (Fig. 1, Ref. 1) a polarizer (Fig. 1, Ref. 2);

an element (Fig. 1, Ref. 5) in which the direction of orientation of molecules is twisted from a

light incident side to a light outgoing side (Col. 10, lines 1-55); an analyzer (Fig. 1, Ref. 3) and a

photodetector (Fig. 1, Ref. 4).

Ohsaki et al. ('352) substantially teaches the claimed invention except that it does not

show a processing device for processing output signals from the photodetector. Hirosawa ('208)

shows that it is known to provide a processing device for processing output signals from the

photodetector (Fig. 1, Ref. 8; Col. 5, lines 13-17) for an apparatus for measuring the pretilt of a

liquid crystal. It would have been obvious to combine the device of Ohsaki et al. ('352) with the

processing device of Hirosawa ('208) for the purpose of providing a device, which allows

calculations of output signals at the measurement area, therefore providing real-time analysis of

the output data.

The reference of Ohsaki et al. ('352) further discloses determining the dependence of

transmitted light intensity on a light incident angle based upon the transmitted light intensities for

a plurality of light incident angles that were output from the photodetector; wherein a plurality of

light incident angles are determined by rotating the element about an axis perpendicular to the

direction of light from the light sources in which light is transmitted in the direction towards the

element and detects the pretilt-angle of the element based upon the analysis results (Col. 11, lines

24-68).

Claim 17

Ohsaki et al. ('352) further discloses a quarter-wave plate (Fig.6, Ref. 9) is provided

between the element (Fig.6, Ref. 5) and the analyzer (Fig. 6, Ref. 3).

Claim 18

Ohsaki et al. ('352) further discloses determining the dependence of the transmitted light

intensity on the light incident angle based upon the transmitted light intensities for a plurality of

optical elements arrangements for each of the plurality of light incident angles that are output

from the photodetector, and detects the pretilt angle of the element based upon the analysis

results (Col. 11, lines 24-68).

Claim 19

The reference of Ohsaki et al. ('352) further discloses measuring the retardation for the

plurality of light incident angles so as to determine the pretilt angle (The rotation of element (5)

in Ohsaki et al. ('352) produces a retardation of the angles of incident light and therefore reads

on applicants limitations).

Claim 20

Ohsaki et al. ('352) further discloses determining the pretilt angles by measuring the

stokes parameter of the plurality of light incident angles. (The reference of Ohsaki et al. ('352)

discloses all the optical elements needed to calculate the stokes parameter as disclosed in

applicants specification on page 18, paragraph 2 and therefore reads on applicants limitations).

Claim 21

The reference of Ohsaki et al. ('352) further discloses a light source emitting

monochromatic light or a converter for converting the light emitted by a light source into

monochromatic light (Col. 10, lines 57-64).

Claim 22

Ohsaki et al. ('352) further discloses determining the dependence of the transmitted light

intensity on the light incident angle based upon the transmitted light intensities for a plurality of

optical elements arrangements for each of the plurality of light incident angles that are output

from the photodetector, and detects the pretilt angle of the element based upon the analysis

results (Col. 11, lines 24-68).

Claim 23

The reference of Ohsaki et al. ('352) further discloses measuring the retardation for the

plurality of light incident angles so as to determine the pretilt angle (The rotation of element (5)

in Ohsaki et al. ('352) produces a retardation of the angles of incident light and therefore reads

on applicants limitations).

Claim 24

Ohsaki et al. ('352) further discloses determining the pretilt angles by measuring the

stokes parameter of the plurality of light incident angles. (The reference of Ohsaki et al. ('352)

discloses all the optical elements needed to calculate the stokes parameter as disclosed in

applicants specification on page 18, paragraph 2 and therefore reads on applicants limitations).

Claim 25

The reference of Ohsaki et al. ('352) further discloses a light source emitting

monochromatic light or a converter for converting the light emitted by a light source into

monochromatic light (Col. 10, lines 57-64).

Claim 26

The reference of Ohsaki et al. ('352) further discloses measuring the retardation for the

plurality of light incident angles so as to determine the pretilt angle (The rotation of element (5)

in Ohsaki et al. ('352) produces a retardation of the angles of incident light and therefore reads

on applicants limitations).

Claim 27

Ohsaki et al. ('352) further discloses determining the pretilt angles by measuring the

stokes parameter of the plurality of light incident angles. (The reference of Ohsaki et al. ('352)

discloses all the optical elements needed to calculate the stokes parameter as disclosed in

applicants specification on page 18, paragraph 2 and therefore reads on applicants limitations).

Claim 28

The reference of Ohsaki et al. ('352) further discloses measuring the retardation for the

plurality of light incident angles so as to determine the pretilt angle (The rotation of element (5)

in Ohsaki et al. ('352) produces a retardation of the angles of incident light and therefore reads

on applicants limitations).

Claim 29

Ohsaki et al. ('352) further discloses determining the pretilt angles by measuring the

stokes parameter of the plurality of light incident angles. (The reference of Ohsaki et al. ('352)

discloses all the optical elements needed to calculate the stokes parameter as disclosed in

applicants specification on page 18, paragraph 2 and therefore reads on applicants limitations).

Claim 32

Ohsaki et al. ('352) further discloses detecting the pretilt for the retardation which is

based on the stokes parameter of the plurality of incident angles. (The rotation of element (5) in

Ohsaki et al. ('352) produces a retardation of the angles of incident light and discloses all the

optical elements needed to calculate the stokes parameter as disclosed in applicants specification

on page 18, paragraph 2, therefore the reference of Ohsaki et al. ('352) determines the pretilt

angle of the optical element.)

Claim 37

Ohsaki et al. ('352) further discloses detecting the pretilt for the retardation which is

based on the stokes parameter of the plurality of incident angles. (The rotation of element (5) in

Ohsaki et al. ('352) produces a retardation of the angles of incident light and discloses all the

optical elements needed to calculate the stokes parameter as disclosed in applicants specification

on page 18, paragraph 2, therefore the reference of Ohsaki et al. ('352) determines the pretilt

angle of the optical element.)

Allowable Subject Matter

5.   Claims 5-7,13-15,30,31,33-36,38,39 are objected to as being dependent upon a rejected

base claim, but would be allowable if rewritten in independent form including all of the

limitations of the base claim and any intervening claims.

Conclusion

6.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

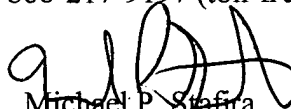Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430.

The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Frank Font can be reached on 571-272-2415. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael P. Stafira
Primary Examiner
Art Unit 2877

April 4, 2004